THE ZOOLOGIST

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EDITORIAL ADDRESS.

A NEW Editor in any phase of journalism—scientific or otherwise – sometimes denotes a fresh departure, often implies a change in method, frequently creates prejudice that some particular subject may be more or less neglected, or another unduly favoured, and doubtless produces some reflex of individuality, as must and should be the case. It may therefore be well to assure our readers that this magazine is still 'The Zoologist,' a monthly journal devoted to Natural History, as founded in 1843; and its aim is still, as stated by Edward Newman in his first Preface, to "combine scientific truths with readable English;" while in its pages "everyone who subscribes a single fact is welcome—nay, more than that—has a direct claim to be admitted as a contributor." To this may be added the words of the recent editor, who has so ably conducted 'The Zoologist' since 1877, that "it must always be remembered that Zoology is one of the most progressive of the sciences." Thus acting on the lines of my predecessors, I trust this magazine — which now enters a new series — will follow the path on which it started, in the advancement of Zoology by recording facts and suggesting conclusions, in maintaining the interest in British Zoology, and in adding to the philosophical standpoint of our insular science by narrating the annals of the larger fauna of which our own forms only a part.

Some changes will take place in our pages. The official reports of the meetings of Natural History Societies will be discontinued. These are fully published in other journals both weekly and monthly, and much of the space now devoted to the same will be utilized for more original matter. The Editor, however, will always be glad to receive and insert notes recording facts and subjects of special interest which have been brought forward at the meetings of our Natural History Societies, and these may prove of a more readable, explanatory, and less technical character than must perforce be the nature of a bald abstract of the whole proceedings of a Society's meeting. Not only is it hoped to fill any lacuna that may thus occur with more general zoological information, but with the support of contributors to even increase the size of the publication.

A Zoology which excludes *Homo* is like 'Hamlet' without the Prince of Denmark. "Early Man in Britain" proclaims his identity to the out-door naturalist who comes across the ancient Barrow as well as the more recent Mound. His flint implements still remain in evidence, and often in conjunction with the *débris* of an extinct fauna which no Zoology can disregard. The fauna of the present cannot altogether be studied without reference to that of the past; and just as the palæontologist must have some zoological training, so the zoologist cannot dismiss and consign to a purely geological standpoint the animals—especially the British animals—of a past era. Prehistoric Man is now at least a reality, and not a theory; he existed with, and was part of, a phase of animal life which is only separated from that of to-day in degree and not in kind. It is therefore hoped that in our pages may be found contributions—so far as these islands are concerned—as to his past history, his physical peculiarities, and his connection with our old British fauna. General treatises on Anthropology are not desiderated, but it is desired to secure records of where his presence can be maintained.

Living in the age—nay, the atmosphere—of Darwin and Wallace, it is impossible to disregard those generalizations which add philosophy to the science and charm to the subject. Not only do we care to know how animals are as we see them, but also to trace the modifications which have so largely influenced their present appearance. Evolution is not only a

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subject which, in some form or other, is coeval with thinking man, however crude and wild some early hypotheses may have been, but it is now the established corner-stone of the zoological edifice. There may be much pure guessing, considerable theoretical sack without much bread of fact; but to abstain from all theory is equivalent to discarding the method of Darwin, to ignoring the speculation of a Humboldt. The Editor therefore hopes to receive the thought-out conclusions of contributors on the facts acquired in, and by, their special studies and observations, which may be qualified in the words of Treviranus, who prefaced his speculative opinions in these words:—"The author will give opinion and theory a place in this work, but he is far from those who give their dreams and fancies a reality and permanence, believing that his own theories may perish, and hoping to direct the current of thought in Biology to adapt itself to Nature, and not make Nature adapt itself to the current of thought."

If, however, facts are made more philosophical by generalization, it is clear that all speculation must and should depend on facts, and it is expected that 'The Zoologist' will in the future, as it has done in the past, prove a storehouse of the same, a journal worthy of the observations that immortalized Gilbert White and canonized Richard Jefferies. Its pages are open to record all observations, the only conditions being that such records shall be original, and the species to which they apply accurately determined. With all our knowledge of Natural History it is almost phenomenal how little is still known of the life-histories of many living creatures inhabiting even these islands, while with scarcely an exception there are no animals from which we cannot learn by intelligent observation. The ornithologists have worthily borne the heat and burden of the day in preceding volumes; it is to be hoped that their good example may be followed in other branches of our varied fauna. 'The Zoologist' invites the help of the successors and disciples of Yarrell, Bell, and Ray, of Knapp, "Rusticus," and Buckland.

In our pages a special interest will attach to Museum notes. It is of importance to zoologists to be reminded or informed in what institution or private museum the collections made by travelling and home naturalists are deposited; it is of even greater importance to tabulate the principal additions made to zoological science by such collections. Our 'Zoological Record' amply narrates the number of new species and forms added to the nomenclature, in fact, constitutes a Zoological Directory; we hope to receive some information as to how these accumulations have enlarged the bounds of zoological conclusions. It is well to remember in what Museum a fauna, or section of a fauna, is best represented. Again, well-known private collections are constantly, through death or other circumstances, either sold in their entirety or disposed of in parts by the auctioneer or natural-history agent; notes as to such removals will be always welcome. These are particularly valuable with regard to British collections. We often hear of the little done in Zoology by the "mere collector," and yet his collection, which in the hands of other naturalists could be made to tell its story, is allowed to be distributed—often virtually destroyed—without a record of its destination being published. No doubt the highest form of patriotism would be shown in bequeathing all such collections to the national or local museum; but human circumstances only too frequently make such a course impossible; or, again, a day may arrive when State or local funds are available to purchase them; but in the mean time it is at least advisable to chronicle the dispersal and migration of what has been achieved with so much labour, and may never in entirety be amassed again. The "mere collector" is not at all unimportant if his material subsequently reaches right hands. The ordinary subscriber to Mudie's is not necessarily a literary man, nor is the average collector always what we understand as a naturalist; but one has as much right to be encouraged as the other if we look to ideal potentialities and not to present fame or notoriety. Even the heads of the Church must have a congregation.

Finally, the present Editor solicits the special assistance of our British naturalists, and trusts that the pages of 'The Zoologist' may still be filled with facts and conclusions, whilst controversy and hyper-criticism may be thus crowded out.

January, 1897.

RECENT ADDITIONS TO THE BRITISH AVIFAUNA.

By H. E. Dresser, F.L.S., F.Z.S., &c.

Quite recently a specimen of Pallas's Willow Warbler, *Phylloscopus proregulus* (Pall.), was forwarded to me for examination by Mr. Thomas Southwell, of Norwich, and I exhibited it on his behalf at the meeting of the Zoological Society held on Tuesday, Dec. 1st. This bird, which was obtained at Cley-next-the-Sea, Norfolk, on Oct. 31st last, affords another instance of the fact that most of the recent additions to our British avifauna are visitants from the East, chiefly from Northern Asia. It is only quite recently that another Asiatic species occurred for the first time on record in our island, *viz.* the Greenish Willow Warbler, *P. viridanus*, Blyth, a specimen of which was obtained at North Cotes, Lincolnshire, on Sept. 5th last; and only a short time ago a specimen of the small race of our Chiffchaff, which I have only hitherto seen from Eastern or South-eastern Europe, and which was obtained at Easington by Mr. Witherby, was sent to me for determination. This form, which is nothing but a diminutive race of our Chiffchaff, was described by Homeyer (Erinn. a. d. Samml. Deutschl. Ornith. 1870, p. 48) as distinct, under the name of *Phylloscopus brehmi*, but I do not consider it worthy of specific rank.

The Yellow-browed Warbler, *P. superciliosus* (L. F. Gmel.), is another Asiatic Warbler which has occurred here on several occasions, and it is worthy of note that Asiatic species which occur on Heligoland generally find their way here sooner or later. Thus the Yellow-browed Warbler has occurred frequently on that island, the Greenish Willow Warbler three times, and Pallas's Willow Warbler once or twice; and we may therefore look for the Siberian Chiffchaff, *P. tristis*, Blyth, Eversmann's Warbler, *P. borealis*, Blasius, the Bright-green Willow Warbler, *P. nitidus*, Blyth, here, as all these Warblers have been obtained on Heligoland. It is very possible that one or more have visited our island and have been overlooked, as at the first glance they may be passed over as belonging to one of the common species, for it must not be forgotten that the migrants do not have to undergo so close a scrutiny here as is the case on Heligoland, where every man is a birdcatcher, and will at once recognize a new or unrecorded species to that island.

It is somewhat strange that the Siberian Meadow Bunting, *Emberiza cioides*, which is one of the recent additions to our British avifauna, has not yet been recorded from Heligoland. On the other hand, the following species of Asiatic Buntings have occurred on Heligoland, but have not yet been noticed in Great Britain, *viz.* the Yellow-breasted Bunting, *E. aureola*, Pall.; the Pine Bunting, *E. leucocephala*, Gmel.; Cretzschmar's Bunting, *E. cæsia*, Cretz., any of which may be looked for here; and Strickland's Bunting, *E. cinerea*, Strickl., is stated to have been seen, but not obtained on Heligoland.

There are many instances of the gradual extension westward of Asiatic birds, as, for instance, that of the Shore Lark, *Otocorys alpestris* (Lin.), which a century ago was but an occasional and rare visitant to Europe proper, and was not known to breed in Scandinavia until about 1835; whereas now it breeds commonly in Lapland, and is frequently met with in considerable numbers during the seasons of migration as far west as the British Islands; and, according to Mr. Gätke, hundreds of thousands pass Heligoland each autumn. Again, we have the case of the Scarlet Grosbeak, *Carpodacus erythrinus* (Pall.), which in 1856, when, as a lad, I first visited Finland, was but a rare species; and I well recollect my delight in finding that it had nested in the Botanical Gardens at Helsingfors. Now, however, it is quite a common species in some parts of Finland, and nests regularly near Helsingfors.

To return, however, to Pallas's Willow Warbler. This interesting little bird was first described in 1811 by Pallas (Zoogr. Ross. As. i. p. 499), but Gould figured and redescribed it in 1837 (B. of Europe, ii. pl. 149), and gave it the name of Dalmatian Regulus, *Regulus modestus*. Subsequent writers have to a large extent confused the Yellow-browed Warbler and Pallas's Willow Warbler, and the first specimen of the Yellow-browed Warbler obtained in Great Britain was recorded under the name of *Regulus modestus*, Gould.

Pallas's Willow Warbler has recently been found almost every year during migration on the western slopes of the Ural range, but has only once been obtained on Heligoland, and once seen, though not secured; thus it is still an extremely rare straggler in Europe west of the Ural. The British-killed specimen was shot by a son-in-law of Mr. H. N. Pashley, who has obtained so many rarities at Cley-next-the Sea, where the last one procured was the Aquatic Warbler. Mr. Gätke holds that Pallas's Willow Warbler may be separated into two subspecies, the Siberian form, the true *P. proregulus* of Pallas, being greener and brighter in tinge of colour on the upper parts, the under parts being pure white with a lemon tinge, the second quill being equal to the eighth; whereas in the Himalayan or southern form, which he proposes ('Ibis,' 1889, p. 578) to call *Phylloscopus newtoni*, the second quill is equal to the tenth, the plumage is dull brownish yellow in tone of colour, and the under parts are not so white. I cannot, however, endorse this view, as in a series I have found both the tone of colour and the relative length of the quills very variable; but I may remark that, were it possible to recognize these two subspecies, the British-killed specimen must be referred, as might be expected, to the Siberian and not to the Himalayan form.

With regard to *Phylloscopus viridanus*, this Warbler has been obtained on Heligoland on three occasions. It inhabits Central Asia, but how far north it ranges I have not been able to ascertain. It is common in the Himalayas, and winters in India as far south as Ceylon. That it breeds in Europe there can be no doubt, as I received a young bird barely able to fly from Tjubuk, in the Southern Ural. This specimen I referred to *Phylloscopus plumbeitarsus*, Swinh., when in 1878 I wrote the article in the 'Birds of Europe,' but subsequently discovered and corrected my error.

ON THE OCCURRENCE OF PALLAS'S WILLOW WARBLER IN NORFOLK.

By Thomas Southwell.

In the December number of 'The Zoologist' I had the pleasure briefly to record the occurrence of a specimen of the above rare Warbler, *Phylloscopus proregulus* (Pall.), at Cley-next-the-Sea, Norfolk, on Oct. 31st last. Mr. Ramm, the person who shot the bird, tells me that he found it amongst the long grass on the bank or sea-wall, not far from the sea, at Cley, a locality which has produced many rare migrants, and at first took it for a Goldcrest, but on approaching to within two or three yards, the bird being very tame, he thought he recognized a Yellow-browed Warbler, a species he had seen before, and therefore secured it. Mr. Pashley, of Cley, to whom the bird was sent for preservation, forwarded it to me for determination, as he had some doubt whether it was really a Yellow-browed Warbler; and, with the assistance of Mr. Gurney, we were able to identify it as Pallas's Willow Warbler, *Phylloscopus proregulus.* This Mr. Dresser was good enough to confirm; he also exhibited the specimen, which proved on dissection to be a female, probably adult, at the meeting of the Zoological Society on Dec. 1st, 1896.

Considerable confusion exists in the writings of the ornithologists of the first half of the present century with regard to two nearly allied species of this difficult group. I should therefore be glad if you will allow me to make a few remarks, which I hope may assist in placing in a clearer light the history of the claims of this, and the Yellow-browed Warbler, to be regarded as accidental migrants to the eastern shore of Great Britain.

Phylloscopus proregulus seems to have been first described by Pallas in the 'Zoographia Rosso-Asiatica,' which appeared in 1811, but was probably little known (if at all) to British ornithologists till the publication of Gould's 'Birds of Europe' in 1837 (vol. ii. p. 149), where Mr. Gould describes a bird, then new to him, and as he also believed new to science, which he named *Regulus modestus*, with the trivial name of "Dalmatian Regulus," commemorative of the locality of its origin. Mr. Gould's words are as follows:—"A single specimen of this interesting little bird has been sent to us by the Baron de Feldegg, of Frankfort, to whom our acknowledgments are due . . . . for this instance of his liberality in consigning to our care . . . . a bird probably unique in the collections of Europe." The only history of the bird which Mr. Gould was able to obtain was that written on the label attached to it by De Feldegg, as follows:—"I shot this bird, which on dissection proved to be a male, in Dalmatia in the year 1829'! Mr. Gould further adds that he named the species *modestus* in allusion to its chaste plumage, as he could not find that it was known to German ornithologists.

The next we hear of the "Dalmatian Regulus" is in a communication to the 'Annals of Natural History' (vol. ii., Dec., 1838, p. 310), in which the late John Hancock, of Newcastle-on-Tyne, states that on Sept. 26th, 1838, he shot, on the banks near Hartley, on the coast of Northumberland, a bird which "corresponds exactly with Gould's *Regulus modestus*," and claims the species as British. His observations on the manners and appearance of the bird, which are as follows, are interesting:—"Its manners, as far as I had an opportunity of observing them, were so like those of the Golden-crested Wren that at first I mistook it for that species. It was continually in motion, flitting from place to place in search of insects on umbelliferous plants, and such other herbage as the bleak banks of the Northumberland coast affords. Such a situation could not be at all suited to the habits of this species, and there can be little doubt that it had arrived at the coast previous to or immediately after its autumnal migrations." Thus the "Dalmatian Warbler" came to be regarded prematurely, as will be seen, in the light of a straggler to our shore, and was for a time duly accepted as such.

"Meanwhile," to quote Prof. Newton in Yarrell's 'British Birds' (vol. i. p. 443), "it was shown in 1840, by Count Keyserling and Prof. Blasius (Wirbelth. Eur. p. lv), that Mr. Gould's *Regulus modestus* was no new species at all, but one described many years before by Pallas," as above mentioned; this, however, of course did not remove the species from the European avifauna, but only cancelled Mr. Gould's name in favour of that conferred by Pallas at an earlier date. As will be seen, however, it had to disappear for a time from the *British* list, as it was further discovered that Mr. Hancock's bird had been wrongly determined, and belonged to a closely allied species, the *Motacilla superciliosa* of Gmelin, the Yellow-browed Warbler. Mr. Swinhoe pointed out the distinctive features of the two birds in the 'Proceedings' of the Zoological Society for 1863 ("Catalogue of the Birds of China"), p. 297, and further stated that Mr. Hancock's specimen was specifically identical with examples of the Yellow-browed Warbler obtained in China. Thus we lost the Dalmatian Warbler as a British bird, and obtained the Yellow-browed Warbler in its place.

In the 'Ibis' (1867, p. 252) Mr. Hancock corrects his previous determination of the bird killed by him in 1838, stating in what respects he found it to differ from Gould's *Regulus modestus*; and Mr. Gould does the same in the second volume of his 'Birds of Great Britain' (1873), when referring to the confusion which had arisen in consequence of Mr. Hancock's bird having been regarded by many authors as specifically identical with that received from Baron Feldegg, and figured by him in the 'Birds of Europe' under the impression that it was a newly discovered species. It may be mentioned here that *Phylloscopus superciliosus* has subsequently been met with in Britain in some eleven instances, one of which was on our own coast at Cley on Oct. 1st, 1894. Having thus disposed of this puzzling subject, we may turn to the bird under immediate consideration.

The next and only other occurrence of Pallas's Willow Warbler (Dalmatian Warbler) in Europe, until the Norfolk specimen, so far as I know, is that mentioned by Herr Gätke in his 'Birds of Heligoland' (p. 293). On Oct. 6th, 1845, Claus Aeuckens, one of his most devoted collectors, then a youth, and not having arrived at the age when he might be trusted with powder and shot, armed only with "a hunting-bag full of rounded pebbles, which he knew how to employ with the most astonishing dexterity," killed a small Warbler with one of his stones "as it was flying round the face of the cliff, and completely crushed it against the rock." Aeuckens noticed that the bird was an unusual one, and brought a wing which had remained undamaged, "with a portion of the lower part of the back with part of the lemon-yellow plumage still adhering to it," to Mr. Gätke, who at first inclined to the idea that it belonged to a species of *Regulus*, but Aeuckens emphatically insisted that the bird was a Warbler. It was not till the year 1879, when Von Homeyer visited him, bringing a Siberian skin of *P. proregulus*, that he fully satisfied himself his wing belonged to a bird of that species. On Oct. 29th, 1875, Aeuckens, accompanied by his nephew, again saw a bird of this species a few steps in front of him, under the edge of the cliff, in such a position that had he shot it, it would have fallen into the surf below; they had ample leisure to contemplate the bright lemon-yellow plumage of the lower part of its back, but no opportunity offered of securing it. Finally, by the occurrence of the specimen at Cley on Oct. 31st last, after various changes and much confusion, we are able to restore Mr. Gould's so-called Dalmatian Warbler—really Pallas's Willow Warbler—to a place in the list of accidental visitors to Britain; and it may be that, attention having been called to the distinguishing characters of the species, it will be found, as in some other instances, to be of more frequent occurrence than has hitherto been suspected.

The distribution of this species is thus given by Mr. Seebohm in the 'Catalogue of the Birds in the British Museum' (vol. v. p. 72):—"Pallas's Barred Willow Warbler breeds in the subalpine districts of South-eastern Siberia, and throughout the alpine districts of the Himalayas from Cashmere to Burma, passes through North China on migration, and winters in South China, Burma, and Bengal"; and, it may be added, occasionally straying as far westward as Heligoland and the east coast of Britain. Mr. Dresser, in part ii. of the Supplement of his 'Birds of Europe' (March, 1895), gives some very interesting particulars with regard to the distribution and breeding habits of this species, in which, however, he exercises considerable discretion, as it has so often been confounded with *Phylloscopus superciliosus*: "In its habits, mode of life, and nidification, although it cannot well be separated generically from the Phylloscopi, it shows affinity to the genus *Regulus*, whereas *P. superciliosus* is a true Willow Wren." Mr. Gätke is of opinion that there exists a difference between the Siberian and Indian forms of this bird; but Mr. Dresser, as a result of his examination of specimens of both the northern and southern forms, finds the differences so slight and the individual variations so frequent that he cannot support Mr. Gätke's views. Should such a difference, however, be found to exist, he informs me that the Norfolk-killed bird would certainly belong to the Siberian form.

"It frequents pine-woods, and those of mixed pine and birch in hilly districts, sometimes ranging in the mountains as high as the border of tree-growth, and it is also met with in the beech-covered valleys." The call-note is said by various authorities to be seldom repeated, and to be rendered as *tsii*, very different from that of *P. superciliosus;* and the song of the male, which is continued for hours without intermission, is described as melodious, varied, and sweet, and "so loud that it rings through the forest, and is astonishing as coming from so small a bird." The nests are placed on the branches of pines or cedars, either near the outer end or where the junction of the bough with the stem takes place; they are neatly constructed of the materials at hand, such as grass-bents, moss, and lichens, partially domed and lined with feathers and hair. The eggs, which are produced from late in May in the southern localities to the middle of June in Eastern Siberia, are five in number, pure white, richly marked with dark brownish-red and deep purple-grey spots, chiefly at the larger end; and the female is said to "commence sitting directly the first egg is laid, so that in the same clutch one finds quite fresh as well as incubated eggs" (Dresser, 'Birds of Europe,' Supplement, ii. p. 76).

In my previous notice of the occurrence of this bird, in the December number of 'The Zoologist,' p. 467, I remarked that this species may be distinguished from *P. superciliosus* by "the pale mesial line on the crown." I should have stated that this "mesial line" in *P. superciliosus* is much paler than in *P. proregulus*, and that in females and young birds, according to Mr. Gätke, there is not even a trace of it. The most conspicuous difference, however, is the pale yellow colour of the rump in the latter species.

MAN IN ZOOLOGY.

By E. W. Brabrook, F.S.A.,
President of the Anthropological Institute.

I have to thank the Editor of 'The Zoologist' for giving me the privilege of addressing his readers on "Man." He has himself shown, beyond controversy, how fitting the subject of Man is for the pages of this Journal. A zoology which omitted from its purview the highest and most interesting of all animals would indeed be incomplete.

The founder of the Anthropological Society of London, in his opening address to that body thirty years ago, compared his science to the last volume of a work on zoology, "with perhaps an appendix." He accepted the investigation of the relations of Man to the Mammalia as the first great duty of the society he formed. He did not, however, confine this duty within those limits. On the contrary, he defined anthropology as the science of the whole nature of Man, as including in its grasp nearly the whole of the circle of the sciences.

In the years 1846 to 1850 the relation between the study of Man and the study of animals generally was recognized by the British Association in the appointment of an ethnological subsection to the section (D) of Zoology. Dr. Topinard, in his excellent work 'L'Homme dans la Nature,' says, "l'anthropologie vraie est l'histoire de l'Homme considérée au point de vue animal," and refers to the purpose of that work as being to ascertain as to Man "ses rapports avec la zoologie générale, la place qu'il occupe matériellement parmi les animaux, et son origine probable ou descendance." We are entirely of opinion that this is not the whole of anthropology, but the prominence given to this branch of anthropology by a writer of so great authority and distinction certainly justifies the position I am asking for it in the consideration of professed zoologists. There is no line of cleavage between the two sciences.

It is difficult to suggest a physical faculty of Man which is not shared by him with other animals. It is equally difficult to suggest a moral or intellectual faculty of his which is not foreshadowed in them.

Though the present paper is necessarily directed to the early history of Man in the British Islands, I must ask leave to refer by way of preface to the important discovery by Dr. Dubois in Java of remains to which he gave the name *Pithecanthropus erectus*. Whether we regard the controversy which has arisen over this discovery, or the nature of the remains themselves, they form a fitting introduction to the consideration of the question.

In the neighbourhood of Trinil, in 1891–92, Dr. Dubois unearthed a great number of fossil bones, among which he found the upper part of a skull, a thigh-bone, and two teeth, which resembled those of Man. Great care had been taken in removing the layers of rock one by one, so that it was ascertained that these remains were accompanied by those of animals now extinct. The bones were fossilized, harder than marble, very heavy, and of a chocolate-brown colour.

When the skull is compared with that found in 1857, at Neanderthal, in Prussia, it is observed to be less capacious, less lofty, and in other respects of an inferior type. It may be said, in popular language, to stand as far behind the skull of Neanderthal as that skull, with its low capacity, its prominent eyebrow ridges, and its rapidly receding front, stands behind a normally developed skull of the present day.

The thigh-bone shows a number of peculiarities, the most apparent of which is a large diseased excrescence of bony growth along one side of it. In a paper read at the Liverpool meeting of the British Association in 1896, it was shown that these peculiarities may be found, either alone or in some degree of combination, in thigh-bones derived from existing races of mankind. Whether the thigh-bone belonged to the same individual as the skull is not certain, but it appears to be probable that it did. If so, it would seem that the individual was of short stature.

The teeth are large, and appear from their shape to indicate a greater degree of prognathism in the face than is usual in mankind.

The question has been much discussed whether the remains are those of Man, or of an ape resembling the Gibbon. The discoverer took a middle course, as indicated by the name he gave them, and held that they belonged to an animal, as yet unknown, intermediate between the Ape and Man; in other words, one of the long-sought "missing links." In this view he is supported by the distinguished French anthropologist, M. Manouvrier, and some others. The leading authorities in England hold that the bones are human, but admit their remote antiquity and primitive form.

For the zoologist this question will not appear material. Whether we have here evidence of a type just before, or just after, or in the act of, transmission to another, it would seem that we have at least touched the beginnings of human history more closely than ever before. The trilemma is aptly expressed in the impromptu verses of a learned friend on seeing the remains:—

"Simian skull and human thigh,
Why as neighbours are ye found
Deep beneath the Javan ground?
Grisly comrades, tell me why!

"Were ye one or were ye twain?
Didst thou, monkey, walk upright?
Wast thou, bowless, in the fight,
By thy straight-thighed cousin slain?

"What strange antics wast thou at,
Ancestor of unknown shape,
Ape-like man or human ape,
Pithec-anthro-hylobat?"

I refer to this discovery by way of introduction to the question of the evidence of the antiquity of Man in the British Isles, because I wish to urge the necessity of carrying the imagination far back. We seek for that evidence in implements fashioned by human workmanship, and we have also sought, for the most part vainly, for remains of man himself; but even if we should succeed in finding the rudest and most primitive implements that we could assert to be fashioned by Man's hand, we should still be far from the beginnings of Man. For the art of fashioning an implement, however rude it may be, is still an art, and it has to be acquired.

It required no knowledge of that art for Man, as soon as he became "erectus," to fling stones at other animals whom he wished to kill or to frighten. The significance of the erect position of Man was ably shown by Dr. Munro, in his address at Nottingham in 1893. Its mechanical and physical advantages, the differentiation of the limbs into hands and feet, and the relation between the more perfect condition of those organs and the development of the brain, were pointed out. The difference between the semi-erect attitude of the anthropoids and the perfectly upright position of Man represents a wide gap. The chief movement in the act of progression in Man is performed by an enormously developed group of muscles known as the calf of the leg. In the upper limbs the hand has become the most complete and perfect mechanical organ ever produced. From the first moment that Man recognized the advantage of using a club or a stone in attacking his prey or defending himself, the direct incentives to a higher brain-development came into existence. What a memorable event in the history of humanity (continues Dr. Munro, whose argument I have briefly summarized) was the manufacture of the first sharp stone implement!

How long it took Man to make the discovery and acquire the art, who can say? Even now, the human mind works slowly. May it not have worked even more slowly in that time of Man's infancy? It seems not unreasonable to conclude that this great discovery may have come upon him by degrees, and that the first step in it—the ascertaining that a stone with a sharp edge was more effective than a smooth one, and that such a sharp edge might be produced by smartly knocking one stone against another—would give rise to a rude and simple implement, to which a single knock had given all the effect desired. We may therefore expect that, if any remains of Man's work at this stage are found at all, they would be in such a form as to be scarcely distinguishable from stones which had suffered a natural fracture.

When, therefore, the lamented Sir Joseph Prestwich asserted that there are to be found, on the chalk plateau of Kent, a number of flint implements of rude primitive form, in which the trimming is often very slight, made on the edges of rude natural flints, besides others which, though not the result of chance, show no special design, he stated that which is not in itself improbable. When he told us, further, that the worked edges are commonly rounded off and blunted, and the worked surfaces stained of a deep brown colour, like the natural flint, so that the artificial work is often rendered obscure, he made an admission which is significant of a very great antiquity in the objects, if they be in fact implements worked by Man's hand.

Sir Joseph Prestwich himself, indeed, seemed to shrink from all the conclusions to which his researches into the antiquity of these objects appeared to lead him. If it should prove, he said, that the rude implements have been swept down from Central Wealden uplands forming in pre-glacial times a low mountain range 2000 to 3000 feet in height with the drift which has come from that quarter, they may have to be relegated to a very early period indeed; but that must be a question for the future. We cannot refuse to exercise the same degree of caution, though we run no risk in asserting that it must be exceedingly probable that the industry of fabricating flint implements was a progressive industry, commencing with rudimentary forms, and proceeding by degrees to more elaborate and finished work.

Elsewhere the same enquiry has been pursued, and Mr. Shrubsole has discovered flint implements of the like primitive type at Finchampstead and Old Dean, in Berkshire. Mr. Allen Brown has recognized that these roughly worked flints carry Man back to an earlier period than that called palæolithic, and suggests for it the name "eolithic." Mr. A. M. Bell has also studied the question, and arrived at the conclusion that Sir J. Prestwich was right in his views.

However this may be, there can be no doubt whatever as to the flint implements called palæolithic. One, now in the British Museum, was found in Gray's Inn Road as far back as 1690. Mr. John Frere, who in the year 1797 read a paper before the Society of Antiquaries, on some flint weapons discovered at Hoxne, in Suffolk, remarked that they were evidently weapons of war, fabricated and used by a people who had not the use of metals, and must be considered objects of curiosity from the situation in which they were found, which might tempt us to refer them to a very remote period indeed. A few other similar discoveries were made afterwards, but Mr. Frere's far-seeing suggestion remained unnoticed for sixty years, until M. Boucher de Perthes found some precisely similar flint implements at Abbeville. Since then the finds have been so numerous that the subject has become one of common and familiar knowledge. In the heart of London, as well as in many parts of the country, palæolithic flint implements have been found in enormous numbers, in association with bones of extinct animals, and in circumstances proving their immense antiquity. These animals include the Hippopotamus, Mammoth, Elephant, Rhinoceros, Lion, Wild Cat, Bear, Hyæna, Bison, and Wild Horse. Mr. Worthington Smith has discovered, at Caddington, thirty miles from London, "an undisturbed living and working place of primeval Man," and has traced there, as he had previously done at Stoke Newington, in the north-east of London, a palæolithic floor, that is, a thin stratum of flint, in some places full of flint implements and flakes, and extending over an area of several miles.

We have thus acquired, from all parts of the British Islands, abundant evidence of Man's workmanship, from which much may be gathered as to his manners and customs. Has there been any discovery of early remains of Man himself? If the answer to the question were a decided negative it would not be surprising; for there are many probabilities against the long preservation of human bones.

This, indeed, is an argument that has been strongly used against the authenticity of certain remains found in the year 1888, at Galley Hill, near Swanscombe, in Kent. I take the following summary of the discovery from the useful work on 'Ethnology,' by Prof. A. H. Keane:—

"Nearly perfect skeleton found by Mr. R. Elliott and Mr. Matthew Heys *in situ* at a depth of 8 feet in the Pleistocene high-level gravels about 90 feet above the Thames, with numerous palæolithic implements and remains of extinct mammals close by; skull hyperdolichocephalic, extremely long, narrow and much depressed, with height and breadth indexes 67 and 64; glabella and brow-ridges prominent; forehead somewhat receding; all chief sutures obliterated; three lower molars and two premolars in place; last lower molar, which in Neolithic skulls is smaller, is in this specimen as large, if not larger than the first; height about 5 ft. 1 in.; altogether most nearly related to the Neanderthal, Spy and Naulette types (Dr. Garson); 'is the best authenticated record of the occurrence of human remains in the higher river-drift that has yet been brought forward in England.' (J. Allen Brown). From the anatomical characters Prof. Sollas thinks it highly probable that the remains were in a natural position and of the same age as the gravels, and not merely interred in them at a later (Neolithic) period, as suggested by Sir J. Evans and Prof. Boyd Dawkins (E. T. Newton, *Meeting Geolog. Soc.* May 22, 1895)."

It is certainly to be regretted that these remains were not submitted to the scientific examination of Mr. Newton until about seven years after they had been discovered. The very completeness of the skeleton has tended to throw doubts upon it; for it has been urged that, as we do not possess so complete a skeleton of the much stronger and tougher bones of the extinct animals, it is not likely that we should find one in the case of their human contemporaries. The answer to that can only be given by the circumstances of the discovery, and that answer appears to be sufficient, though not so complete as it would have been if the discovery had been made known earlier.

Small fragments of human bone have been found in other circumstances, which may possibly prove to be remains of palæolithic Man, and may tend in time to accumulate a sufficient body of evidence to afford the materials for forming a clear idea of what he was like. One such fragment was found in 1882 at Bury St. Edmunds, by Mr. Henry Prigg; and an ingenious projection of the fragment recently made by Mr. Worthington Smith shows that it coincides in its contour with the Neanderthal and Spy skulls already mentioned. A frontal bone found at Strata Florida, in Wales, in 1888, has also been investigated by Mr. W. Smith, and presents some resemblance to those types, though he is not inclined to claim any great antiquity for it.

The same excellent writer, in his work entitled 'Man, the Primeval Savage,' has essayed to draw a picture of his subject, from which I can only borrow a few touches:—"Man's voice at that time was probably not an articulate voice, but a jabber, a shout, a roar. . . . The human creatures differ in aspect from the generality of men, women, and children of the present day; they are somewhat shorter in stature, bigger in belly, broader in the back, and less upright. . . . They are much more hairy than human creatures of the present time, especially the old males and the children. . . . The foreheads recede, the large bushy, red eyebrows meet over the nose, the brows are heavy, and deeply overshadow the eyes beneath. . . . Many of the women have whiskers, beards, and moustaches. . . . The teeth project slightly in a muzzle-like fashion; the lower jaws are massive and powerful, and the chins slightly recede. . . . Such ladies as possess lobes to their ears probably have them pierced, and a small feather pushed through the orifice. . . . The savages sat huddled close together round their fires with fruits, bones, and half-putrid flesh. . . . Then, as now, quarrels would sometimes arise over meals. . . . Man at that time was not a degraded animal, for he had never been higher; he was therefore an exalted animal, and represented the highest stage of development of the animal kingdom of his time."

Between this Man and neolithic Man, who polished his stone tools by rubbing them together, but had no knowledge of metals, there is a long lapse of time; but neolithic Man, and we ourselves through him, are lineal descendants of this primeval savage. The gap between them is proposed by some to be bridged over by a mesolithic or intermediate type of Man. The opinion most generally held is that the transition from palæolithic to neolithic Man took place elsewhere than in this country—it is suggested that it might have taken place in Africa—and that in this country there was a long interval of complete depopulation—that the palæolithic peoples all died out, and many centuries passed before the neolithic peoples arrived. It is held by some, however, that here as well as elsewhere there was continuity. Whichever view may be correct, there can be no doubt of the lineal descent, and we may accept it either with pride at having risen so high, or with humiliation at having begun so low, as we please.

The zoologist has therefore an opportunity offered to him of research for the discovery of facts that will throw light on a number of unsolved problems. The missing links leading up to Pithecanthropus, and from him to the pre-palæolithic peoples; the rude workmanship of these latter; the remains of palæolithic Man, and the links between him and neolithic Man, are all subjects upon which research may some day be rewarded by important discoveries. The outdoor naturalist may, if he bear in mind how much there is yet unknown or uncertain as to the real history and belongings of primitive Man, not unreasonably expect to find something that may clear up one or other of these doubtful questions. In any case, the study and training of the zoologist will eminently fit him for such an undertaking, for it is upon zoological principles and by zoological methods that such questions can most properly be determined.

I have still another appeal to make to the zoologist, but it is one which I address to him in common with the thoughtful and scientific observer generally. It is that he should join in the careful and systematic record of the phenomena of the people of our own time and country. For this purpose an ethnographic survey has been organized for the United Kingdom, and facts are being accumulated with regard not only to the physical types of the inhabitants of various places, but also to their current traditions and beliefs and their peculiarities of dialect, as well as to the monuments and remains of ancient culture in their vicinity, and the other historical documents which tend to give evidence as to the continuity of race. If each individual among us is the result not only of the circumstances by which he is surrounded, but of the physical and moral characters which have come to him by the use during countless generations of faculties that have been ever growing and widening, the close observation of the present generation may reveal much of the history of the past, and give guidance to the generations to come.

NOTES FROM NORWAY.

By John Cordeaux.

These notes have reference to a tour made in August last from Bergen to Vadsö in the Varanger Fjord, in the Bergen Steamship Company's boat the 'Neptune,' to view the total eclipse of the sun on August 9th. In crossing the North Sea from Newcastle to Stavanger very few sea-birds were seen—some Gulls, Guillemots, and an occasional Skua. When about half-way across, two Dolphins (*Delphinus delphis*) approached the boat and then shot ahead.

We left Bergen on August 1st at 11 p.m., and until we had rounded the North Cape were seldom outside the island belt (Skjærgaard) which fringes the whole length of the mainland. Opportunities were given, both on the out and return journey, for spending several hours on shore at those places where the vessel called—such were Aalesund, lovely Molde, Christianssund, N. Trondhjem, Torghatten, Harstedhavn in the Lofotens, Svartisen glacier, Tromsö, Hammerfest, North Cape (Hornvoek Bay), Vardö, reaching Vadsö at 3 p.m. on August 7th.

The commonest Gulls on the coast are the Lesser Black-backed and the Herring Gull, mixed flights of both following in the wake of the steamer almost continuously on the chance of picking up any scraps thrown overboard. Other Gulls were the Great Black-backed, the Common, and the Kittiwake; the latter, north of the Arctic Circle, being the predominant species and increasing in numbers the farther we go north. A few miles south of the Bird-rock (Hjelmsö), near the North Cape, we passed through an enormous flock of Kittiwakes floating in long extended line, the birds in the rear constantly rising and flying over the heads of those before them to take a front place. All were so eagerly feeding that they took little notice of the passage of our boat, being much too busily engaged picking some small object from the water, probably some of those small crustaceans which form the food of the whales. A large proportion were birds of the previous year retaining the black markings on the neck. This also was the case at Hjelmsö, where two cannon were fired under the cliff, and instantly on all sides, and across our deck, the air was cut by the passage of countless birds all rushing out to sea; Guillemots, Razorbills, Puffins, Black Guillemots, Cormorants, and thousands of Kittiwakes; high aloft, above the excited throng, floated a large Buzzard, probably *Buteo lagopus*, the only bird of prey I saw inNorway. The sea was covered with the young of Guillemots and Razorbills unable to fly, and our slowly revolving screw I thought must have destroyed several as we steamed at slow speed in front of the black mural precipices on whose ledges the little swimmers first saw the light of the arctic summer. On many of the low flat holms on the coast the Gulls of various species appeared to be nesting by hundreds, with swarms of young grey birds running about the rocks, but none able, as yet, to use their wings. In most cases probably the first eggs from two layings had been taken. The pretty Black Guillemot, in pairs, is one of the commonest sea-birds on the coast. I never saw a Gannet, the Fulmar, Great Skua, or a Shearwater. Several Pomatorhine Skuas, especially north of the Circle and in the Lofotens; Richardson's and Buffon's Skuas were both exceedingly plentiful. Much amusement was afforded on board the 'Neptune' by watching these pirates chasing and bullying their neighbours, descending swiftly and striking the unfortunate victim on the back till he had paid toll by disgorging his honestly-earned meal. I always thought a Gull on the water was safe from their attacks, but this was not the case. Two beautiful adult long-tailed Buffon's Skuas made a most determined attack on a Lesser Black-back on the water. The Gull screamed his best, but the persecutors never desisted till they had gained their point. Both the smaller Skuas were very abundant between the Cape and Vardö in the Arctic Ocean, being constantly in sight on these wilderness waters. Both the Cormorant and Shag are common, the latter especially. I never saw so many Shags in one day as I saw in the Jarfjord east of the Varanger, and touching the Russian frontier. They sat on the rocks in lines and groups, slowly beating their expanded wings, like so many old ladies in dark shot-silk dresses fanning in a hot ball-room.

When running up the coast a few pairs of Grey-lag Geese were seen, also a considerable flock, presumably of this species, on a low grassy holm, before coming to the mountain peaks known as the "Seven Sisters of Alstenö." The Merganser was common in the land-locked sounds and fjords, sometimes with a string of downy mites in close company; the Goosander I failed to identify. Ducks innumerable of many species and with crowds of young. From the deck of a steamer it was impossible to identify them, the males, too, being generally in the "eclipse" plumage. Those I succeeded beyond doubt in making out were the Hareld or Ice Duck, Common Pochard, Goldeneye, and Common Scoter. Eiders in immense numbers about the coast villages and fishing stations, semi-domesticated, and nesting in some cases at the foot of walls of houses. The Eiders are strictly preserved during the nesting season, and the "down-harvest" is a most important source of revenue to many who live on the coast and rent the various islands. I paid twenty shillings a pound (English weight) for eider-down at Bergen.

Red-throated Divers were frequently seen and the Black-throated much less so. Altogether during the three weeks on the coast I may have seen half-a-dozen *Colymbus glacialis*, amongst them it is possible there may have been an example of the western-arctic *C. adamsi*, numerous examples of which now exist in some of the Norwegian museums; regarding this western species on the Norwegian coasts, see Prof. Collett's paper in 'The Ibis,' 1894, pp. 269–83, and plate. Of the Arctic Gulls I saw nothing, except a Glaucous Gull, a bird of the previous year on the wing, off the mouth of one of the northern harbours. When running up the coast and close in to the sides of the islands I often saw various waders on the rocks and shingle—Oystercatchers, Turnstones, Redshanks, Purple Sandpipers, Whimbrel, and Ringed Plover, were all identified. The only Tern was *Sterna macrura*, the Arctic Tern, very numerous in some localities. Magpies are plentiful inland, and very familiar and bold. The Grey Crow everywhere, old and young together; some of the Grey Crows in the north have the grey almost white, and in bright sunlight I I thought had a rosy tinge. Ravens were in great force about all the Arctic whaling stations. At Vadsö during the eclipse, and as the gloom thickened, a pair flew to and fro over the harbour, croaking most dismally. The Oystercatchers also got on wing calling incessantly "peep–peep."

When in the Varanger and Jar fjords I spent some time on the look-out for Steller's Eider, but never came across this duck; perhaps it was too early in the season. It is said to be not uncommon in winter in these waters.

One of the prettiest sights I have seen for many years was a flock of 150 to 200 Ruffs and Reeves in a small wet, recently cut meadow between Vadsö and the moors. A stream ran through the little enclosure fringed with arctic willow and *Comarum palustre* in flower. About one-third were Ruffs; these birds were excessively tame; they were running quickly, with the tibio-tarsal joints much bent, and all eagerly picking out some small object from the grass. Now and then a Ruff would raise himself to the utmost his legs and neck would permit, and look round as much as to say "What is your business here?" When the flock rose they merely circled round close to the ground, and all alighting at once resumed their search within a few yards of where I stood. It was beautiful to watch them, exhibiting as they did not the slightest fear of man. Another interesting sight was the numerous flocks of Phalarope in Vardö and Vadsö harbours; they sat on the water like small butter-bowls, each little head nodding incessantly as they paddled to and fro. They were very tame, keeping the water when only a few yards beyond the sweep of the oars of passing boats, and alighting amongst the shipping. I saw many also on the more open waters of the fjord and in rocky pools on the side of the Jarfjord, swimming very rapidly here and there and snapping at insects.

Of the smaller birds I found on the tundra north of Vadsö and about the whaling station in the Jarfjord, Lapp Buntings, Bluethroats, Red-throated Pipits, White Wagtails, besides the Pipits already noticed by me in 'The Zoologist' (1896), p. 352. I saw the Hedgesparrow on the outskirts of Vadsö, great numbers of House Martins, but have no recollection of seeing any Swallow there, nor the common Sparrow. I never saw a Rook anywhere in Norway north of Bergen. The Willow Wren was common. I watched the Marsh Tit (*Parus borealis*) on some tall plants in the yard of the Marine Barracks at Trondhjem. This seems a very good species, if size and coloration are of any account.

The Wagtails seen were old and young birds of the universal *Motacilla alba,* and once in the north the dark-headed Yellow Wagtail, *M. borealis* of Sundeval, with almost black crown and no eye-streak.

The only notice I have of Fieldfares, besides a few near Voss, was seeing a small flock flying over the birch wood on the hill-side leading up to the foot of the Svartisen glacier in the Holandsfjord. This I think must be the very same wood in which Messrs. Pearson and Bidwell found the Icterine Warbler's nest in June, 1894. It is a charming wilderness of birch, covering rocky ground, on the hill slope, and with a wealth of ferns, meadowsweet, rose-bay, golden-rod, and aconite, all the flowering plants in full bloom, also the very finest and largest clusters of hairbells (*Campanula rotundifolia*) I have ever seen in any part of Europe. Through a canopy of golden-green foliage, lighted by a brilliant sunshine, you got upward glimpses of the great glacier, sweeping downwards from an ice-field of over forty miles in extent. The colour of the ice is a pale malachite-green and crossed with gaping crevasses of cobalt. On the terminal moraines of the glacier our party collected a large number of arctic plants. The Trout were rising everywhere along the shore of the fjord, and made one long for a trout-rod and handy boat.

Nothing struck me more in Arctic Norway than the enormous extent of the birch forests, filling the valleys and clothing the sides of the mountains, till they give place to cold grey rock and a sparse vegetation, with long streaks and patches of pallid snow, carrying the eye forward and upward into the interminable ice-plateaux and the grey-blue shadow-lands of the higher ranges. There seems to be everywhere, both inland and on the bleak tundra, on the shore of the Arctic Ocean, room for all the birds in Europe to nest and enjoy the long summer day of those high latitudes. Unfortunately the time allotted to us did not permit much inland exploration.

Some other birds in my list are a flight of about fifty Greenshanks at Vadsö coming down from the tundra to the shore, some Golden Plover in the same place, and a good many Redshanks. At Voss, and between Bergen and Voss (where I was staying from Aug. 15th to 17th), I noted several Herons, quite a large flock of Woodlarks on some firs by the side of the river, and an Ortolan; Wheatears plentifully. At the Store-Lerfos, near Trondhjem, the Scandinavian Black-bellied Dipper (*Cinclus melanogaster*).

A sharp look-out on board our steamer was kept for cetaceans. At the whaling station on the Jarfjord two Whales were on the slips, and had been partly flensed and cut up. One was the Common Rorqual (*Balænoptera musculus*); the other, so far as I could make out from its long flippers, a Humpback (*Megaptera longimana*). These flippers are wholly white in living or recently captured specimens. On leaving the Jarfjord we were fortunate in seeing a Common Rorqual brought in towed alongside one of the steam whalers. This was about sixty feet in length, and some good photographs were taken of the animal alongside, our own steamer and the whaler stopping for that purpose. In the fjord near Christianssund N. were two species of Dolphin; one of these was dark coloured above and below, and probably referable to *D. tursio;* the other a beautiful black and white one. Two of these latter raced along the side of the ship; they reminded me of a pair of greyhounds in full stretch, now one and now the other making a sudden rush ahead, or diverging from its course to seize some surface-swimming fish (probably mackerel) disturbed by the passage of the steamer. These Dolphins were close to the surface in absolutely clear water; from their markings I have no doubt they were *D. acutus* and not *albirostris*.

On the return voyage to Newcastle, when about fifty miles from the Tyne, we passed through a fleet of Dutch boats, fishing with their masts down. A very large Whale was rolling slowly along, and showing little but his back. Species not determined.

One feature of these northern seas is the enormous abundance of marine invertebrata—*Scyphomedusæ.* They may be seen suspended at all depths in the marvellous transparency of the water. The commonest form has four circular purple rings, like a double eye-glass, at the summit of the disc; others are like parasols—scalped heads, from the colour, somebody called them—with sheaves of long semitransparent tentacles streaming in their wake like the tail of a comet. Progression is a system of contraction and expansion. When the ship was stationary in the harbour, or from some wooden pier, we used to watch them, yawning and gaping their way along in a dilettante manner, much after the fashion that easy-going people pass through life—in a sort of jelly-fish existence.

There are excellent museums at Tromsö and Trondhjem, and a most interesting one at Bergen; and, from an ornithological point of view, particularly rich in game-birds, hybrids, and various plumages—one a hybrid between the Black Grouse and Capercailzie. I particularly noticed many most beautiful varieties of *Turdus pilaris;* a nest of *Garrulus infaustus,* built of twigs of fir and red hair-like lichens, exactly matching the colour of the sitting bird; a beautiful compact well-built nest and eggs of *Hypolaïs icterina;* a specimen of the Ruddy Sheldrake, labelled "Skudesnæs, 12 x. 92"; the American Surf-scoter, *Œdemia perspicillata,* Hjellefjord, Sept. 23rd, 1893, a fine adult male. There is a good collection also of Viking remains and stone implements, which will well repay inspection.

The Bergen Fish-market is a great feature of the town, the smaller fish being kept alive in wooden tanks with a constant stream of salt water passing through; the fish are ladled out with hand-nets to purchasers. Here I saw examples of the Tadpole-fish or Lesser Fork-beard, about fourteen inches long, and of a deep brown colour; also two richly-coloured Wrasse—the Blue-striped and the Ballan Wrasse—and the brilliant Bergylt, the so-called Norway Haddock.

One, if not the chief, industry of Norway is the fishing trade. The Lofoten fishery employs 8000 boats and 30,000 men; the take in 1895 was thirty-nine millions of Cod, in 1896 about twenty-one millions.

As the ornithologist on board the 'Neptune,' I cannot think our voyage to the Arctic Seas was a very remarkable one, as few except marine and shore birds were observed. Botanically, however, considering the lateness of the season, we did very well, and brought back many interesting plants from the tundra north of Vadsö. Eight of these shrubs and plants of the tundra bear fruit in the greatest profusion; the berries remain sweet and uninjured below the snows of winter, and in the spring supply the migrating birds with an inexhaustible supply of food.

NOTES ON THE CHACMA BABOON.

By W. L. Distant.

During a four years' sojourn in the Transvaal I saw many of these animals (*Cynocephalus porcarius*), heard much about them, had two in my possession as pets for nearly three years, and have still one which I brought home with me.

When travelling up country from the Cape in 1893, a troop of at least fifty crossed the railway track just in front of the train at early morning, evidently returning from some marauding expedition. I was told by an old Africander that Baboons and "other vermin" were becoming more plentiful in the colony, owing to the little shooting now done by the farmers.

I was also informed by a very intelligent Africander whom I frequently met in Pretoria, that Baboons can count up to three, but not higher.* As proof of this he related the following experience:—In early days he was once on his brother's farm near where Johannesburg now stands, and where Baboons were committing severe depredations on the mealie crop. As usual, there was one of these animals posted as a sentinel to give warning of the approach of the irate and armed farmer, when the raiders would decamp to a rocky eminence in the vicinity. My informant was accompanied by two friends, making with the farmer four in all. Now, he said, we "will do the Baboons," for they cannot count more than three, and we will leave one of our party behind. They accordingly approached the thieves, who immediately fled, the retiring sentinel still watching them. Three of the men then returned, leaving the armed farmer secreted among the mealies. In a short time the word seemed passed among the Baboons that all was right, as the three human visitors had been seen to retire; the animals once more came forth to steal and feed, and the first thief paid for his limitation in calculating power with his life, as he fell a victim to the farmer's rifle.

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* Mr. Romanes has stated that the Chimpanzee "Sally" was instructed in this art, and that before death her "counting" extended as far as ten. (See 'Darwin and after Darwin,' vol. ii. pp. 31–2, notes.)

Both the specimens I kept were females, one old and the other young, and as time went on our intimacy ripened, and they seemed to become to me more and more like poor relations. The young one I bought from a Boer, who had shot the mother and captured the offspring. It was only after some six months' acquaintance that this animal would be at all friendly, and the explanation I take to be that from wearing a long beard I was not altogether unlike a Boer, and the young Baboon had formed both a distrust and hatred for the murderer of its mother and the capturer of itself. This seemed the more probable, because it always trusted my son, and was friendly with the Kafirs; whilst, though I never punished it in any way, and bribed it continually with sweets and fruits, it still remained a slave to first impressions. This animal used to sleep with a large bull-terrier bitch in its kennel, winding its arms round the body of the dog, which unfortunately died during the Transvaal winter, and the young Baboon contracted a temporary asthma soon after sleeping alone.

I chained this little animal up outside my office window, the length of chain allowing her to sit when she pleased on the window-sill, which she constantly did, only separated from me as I sat at my desk by the glass; but the moment I went outside all good relations were at an end, and she showed terror and dislike if I approached within a distance of three feet. She perfectly understood the separating medium of the glass, which she never attempted to break. Even after six months there was still great distrust, and only the friendship of an armed truce.

Very different was the conduct of the other full-grown matron, who had been long in captivity before I received her as a present. This female, who rejoiced in the name of "Jack," possessed the greatest intelligence I ever met with in any animal not of our own genus. Unlike the younger one, she was friendly to all "whites," but had a perpetual feud with "coloured people," especially Kafirs, who as a rule gave her a wide berth, thus escaping bites, but receiving whenever possible bricks, stones, or other missiles, hurled with no little force and precision. In cold weather—such as winter nights—or when exposed to the full rays of the summer sun, she invariably covered herself with a sack as protection, using it as a white woman does a cloak, or a Kafir woman a blanket. Her staple food was boiled mealies varied with bread, of which she was particularly fond. Add carrots, an occasional cabbage, fruits such as bananas and oranges, and on high days some pine-apple, nuts, a few sweets, or a handful of tobacco, and her tale of food is completed.

Between us there became an established friendship, incapable of being expressed in articulate speech,* but more or less communicated by friendly actions, mutual confidence, and a slight recourse to the universal language of gesture. Such a mutual understanding as existed, and between two animals so widely separated in the zoological scale, was a source to me of sincere pleasure, and also a form of compliment. My poor relation, the Baboon, was really anxious for comradeship, was always grateful for favours, and anxious to please. I once asked a clerical friend to study her as an example of original sin. She had, of course, no morals—unnecessary in a Baboon community—and she was cheerfully superior to all shame. She was greedy, passionate, truculent, and revengeful, but as a rule contented, appreciative of good living, highly courageous, and open in expressing her likes and dislikes. Stoical in bad weather, she was epicurean in the sunny fruit season. Decidedly cynical as far as appearances are concerned, she was yet sophistical, when, with cheeks filled with nuts, she returned an innocent glance to my sceptical deportment before providing more.

This animal would have been useful in a cricket field for her quickness and aptitude in catching. With oranges, I tried her all ways,—with pitches under-hand, and swift straight shots,—but she seldom missed any, and often caught with one hand. She once directed my attention to a flock of vultures soaring overhead, and which I had not noticed. An East Indian vender of pastry frequently visited us, when I usually purchased a tart or bun for the young Baboon and herself. Should this man come without my seeing him, I was always notified of the fact by a series of barks, screams, and grunts.

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* Anderson said that his Bushman told him he could understand the Baboon language,—when they are frightened, or hungry, or are to meet together to defend themselves against an enemy, or to meet to play,—and he knew well what they said, and could talk to them. ('Twenty-five Years in a Waggon,' p. 217.)

When I first searched for insects in the Transvaal, and in a valley beneath high cliffs, I was intensely surprised to find the stones turned over before my arrival. Being positively certain that no other geodephagous coleopterist was in the neighbourhood, I was somewhat inclined, like the Roman missionaries, who, on their arrival in Thibet, found Catholic ritual among the Buddhists, to ascribe the circumstance to occult influence; but this was before I became acquainted with the insect-searching attributes of my friends the Baboons.

I am not aware of any published records of the menstrual periods of female Baboons. These are not zoologically unimportant, and appear to be somewhat irregular. My observations on one animal during 1894–5 were as follows:—Oct. 15th, Nov. 23rd, Dec. 27th, Jan. 30th, March 8th, April 15th, May 20th, July 4th, Sept. 9th, Oct. 21st.

NOTES AND QUERIES.

MAMMALIA.

HOMINIDÆ.

Early Man in Britain.—At Brandon, a village and parish on the borders of Suffolk and Norfolk, there have been recently found, in a field within eighty yards from the Little Ouse or Brandon river, no fewer than sixty-three skulls, which have been examined and described by Mr. Charles S. Myers, B.A., in the 'Journal of the Anthropological Institute.' Mr. Myers is inclined to "assign these remains to a people that lived antecedent to the Saxon invasion. Indeed, there is but one skull in this series that presents in any degree the physical characters of Saxon crania." This prompts the further conclusion that, "if the Brandon skulls date, as there is every reason to believe, from an age prior to the Saxon invasion, the presence of a Saxon in England at this date demonstrates that the Saxon invasion took place more gradually than history would have us conceive, or that Saxons were included in the auxiliary forces introduced by the Romans. Doubtless both these alternatives are true. Even in pre-Roman times the Iceni were a mixed people. Thus the Roman institution of the Comes Litoris Saxonica becomes fraught with a new meaning. On some such hypotheses the early Brandon folk may well have received a sprinkling of Saxon settlers along the Icknield Way from the eastern ports."—Ed.

CARNIVORA.

Dogs of Draught in Belgium.—No visitor to Brussels can fail to be struck with the number of Dogs which are to be seen about the streets employed in drawing small carts and barrows. It has been recently estimated that in the capital alone more than 10,000 Dogs are thus employed, and the number of draught Dogs throughout the country is probably not less than 50,000. Generations of servitude have thus made the Belgian Dog a race *sui generis*. For his size he is said to possess the greatest pulling power of any animal, four times his own weight being considered a load well within his powers. Taking his average weight as 56 lbs., or half a hundredweight, this means that something like 5000 tons are daily dragged about by Dogs in Belgium. The economic importance of the Belgian Dog, and his inability to give expression to his own grievances, have caused the Royal Society for the Protection of Animals to agitate for the amelioration of his lot.—J. E. Harting.

AVES.

Winter Notes from Winchester Water-meads. — September.—The Peewits are gathering together now into large flocks, and are always flying south by easy stages. On the 29th I came across a company of 500 or so that had settled in a ploughed field, and was feeding in a dense mass and chattering. I noticed in this case that a few individuals had separated from the main body, and appeared to be acting as signals to any stragglers that happened to be in the neighbourhood by flying, apparently aimlessly, at a considerable height, and never straying far from their companions. On this date I disturbed a Green Woodpecker from a small copse on the roadside. We have not been visited yet by any Gulls; the weather has been clear and fine for the most part.

October.—The first Gulls (*Larus canus*) arrived on the 7th, in a violent storm of rain and wind, between 12 and 1 o'clock. They left us the next day. I have noticed that these birds utter their sharp cries only when in the act of arriving or departing, but when they are sailing leisurely over the river here they are quite silent. The Sand Martins are collected in large quantities by the end of October, and leave us, save for a few stragglers, by the first week in November. On the 9th there were some birdcatchers in water-meads, who had committed considerable havoc among the Goldfinches, which are numerous here. A fine cock-bird was ensnared as I passed. They had caught a Sparrowhawk, which had flown down into their nets after the decoy-bird. The place which they had chosen for their unlawful sport was entirely public, but the men were not in the least disconcerted. On this date two solitary Peewits passed over, flying south. On the 13th there were five Herring Gulls wheeling at a great height on the other side of St. Catherine's Hill. On the 28th, during a journey to Oxford, I noticed a large flight of Peewits and numerous Fieldfares in the water-meads on the north side of Winchester. The Gulls have not arrived permanently yet.

November.—On the 1st a solitary Gull passed over College, flying inland (west). The Jackdaws and Starlings, which nest in the loosened stones of the College chapel, can be seen together with numerous Rooks in water-meads. On the 6th the Pied Wagtails arrived in numbers, and one bird frequents the College buildings. On the 17th a flock of thirty Gulls arrived, and these birds have stayed all through the winter, their numbers sometimes being increased by new-comers, and sometimes reduced by absentees. On the 22nd two large flights passed over, and finally took a southward course. A Herring Gull visited his congeners in water-meads, but left immediately. The Pied Wagtails are collected in numbers in water-meads by this date. A Wild Duck was floating dead in the river. On the 24th it was clear, with a north wind. A flock of eighty or ninety Gulls passed southwards, flying high. A party of six Brent Geese flying inland (west) passed over water-meads in the morning. The Linnets are numerous and gay. Flights of Gulls, numbering fifty, thirty, forty, eighty, sixty, forty, passed southwards between 2 and 4 o'clock, flying high. A congregation of Fieldfares was disturbed by a Sparrowhawk while feeding in the water-meads by St. Cross. On the 29th one solitary Peewit was flying south over Winchester in the morning.

December.—On the 2nd the first Grey Wagtails have arrived in water-meads, looking very bright with their yellow breasts. There are 100 Gulls feeding in a ploughed field on St. Catherine's Hill, with numerous Starlings. Chaffinches swarm on St. Catherine's Hill and in water-meads. By the 6th the Grey Wagtails are more numerous. On the 8th I saw the Reed Buntings in water-meads for the first time this winter. This bird breeds some way further down the river. The cock-birds are very easily distinguished by their black heads, but the females may often be carelessly mistaken for a Sparrow. By the 17th the Grey and Pied Wagtails are still more numerous. On the 22nd I saw six or seven Bullfinches in water-meads for the first time this winter. The Gulls are as numerous as ever, but have to content themselves, unlike their relations in St. James's Park, with what food they can pick up for themselves.—G. W. Smith (Ivy Bank, Beckenham).

Breeding of Corncrakes in Confinement.—In 1895 I reared a pair of these birds from the nest, and they passed the very mild winter (1895–96) in an indoor aviary. About April 24th I turned them into their summer quarters in an outdoor aviary, and the following day the male started craking vigorously. Towards the middle of May a hole was scratched out in the ground, but it was not until June 12th that the first egg was laid, when the male at once ceased to crake. They would not sit, and on the eggs being removed the craking recommenced, and a fresh hole was hollowed out, and lined with bents, dry grass, &c., and a clutch of eight eggs laid. Incubation, which was carried on by the hen, lasted seventeen days. Both sexes look after and feed the young, which, although they leave the nest on being hatched, do not attempt to feed themselves for about four days. The parents hold the food in their beaks, uttering at the same time a soft and almost inaudible sound, while the young, readily responding to the call, run up and take the food. The young were full grown and able to fly at about seven weeks old, their flight-feathers being the last to grow. —J. Lewis Bonhote (68, Lexham Gardens).

The Flight of the Swift.—With reference to the question asked in the December number of 'The Zoologist,' as to whether this bird is able to rise from the ground, I have found it utterly unable to rise from a perfectly level surface, such as a well-kept road or an oil-cloth-covered or carpeted floor; but from a neglected road, full of ruts and hollow places, it can and does rise, lifting its wings high over its back, and raising itself from a slight elevation by the first downward flap. Its efforts to rise from a carpet are ludicrous, as its long claws enter the texture, and with its first effort it tips forward helplessly. I should expect grass to interfere with its rising, the blades catching in the feet, and thus partly counteracting the lifting effect of the first flap. On a dead level road the tips of the wings strike the surface, and it merely flops along, or that has been the case witht hose which I have observed.—A. G. Butler.

Correction.—In my note "On a chocolate-coloured variety of *Perdix cinerea*" (Zool. 1896, pp. 472–73), some errors have occurred in printing. On p. 472, sixth line from bottom, for "Hinder tail-coverts" read "Under tail-coverts"; p. 473, third line from top, for "Hinder wing-coverts" read "Under wing-coverts"; seventh line from top, for "height 12½ in," read "weight 12½ oz."—F. Coburn (Holloway Head, Birmingham).

PISCES.

Abundance of Sharks in Tropical Seas.—It is singular how few zoological ideas and facts occur to a naturalist on the most frequented tracks of the ocean; the apparent sameness in the vast wilderness of water seems to oppress and stifle observation. One circumstance, however, has always presented itself to the writer when traversing the ocean in tropical regions, and that is the abundance of Sharks, so easily overlooked. When sitting reading near the rails, a casual glance at the water frequently detects the dorsal fin or even the body of a Shark disturbed by the huge liner. Seldom is a prolonged stay at the bows in tropical regions unrewarded by a sight of one of these monsters. It is obvious that those we accidentally notice can form but a small ratio to the number disturbed by the ship, which again passes only as a mere speck through the regions they inhabit. Probably other readers have had the same experience, and it almost seems that the prodigious number of these fishes is barely estimated.—Ed.

NOTICES OF NEW BOOKS.

Red Deer.—Natural History, by the Rev. H. A. MACPHERSON; Deer-Stalking, by CAMERON of Lochiel; Stag-Hunting, by Viscount EBRINGTON; Cookery, by ALEXANDER INNES SHAND. Longmans, Green & Co. 1896.

THE Fur and Feather Series with this volume maintain their standard of excellence in Natural History and Sport. In fact, one great merit of these volumes is to show how sport and natural history should be combined, and not divorced as is so frequently the case. Of course there is no necessity for the naturalist to be a sportsman, though every field naturalist has some of the spirit and ardour that pertain to that pursuit; but there is every reason for the sportsman to be—as he often is—an observant naturalist, and his opportunities are great. To readers of 'The Zoologist' the principal interest will be found in the contribution by Mr. Macpherson, who in delightful phraseology that recalls the scenes among which the Red-deer is found, gives us a local narrative of the life of the animal.

As our author remarks, the history of the wild Red-deer (*Cervus elaphus*) is closely interwoven with our national life, and we may well sigh for the times when "The Weald of Kent was no less the haunt of well-furnished hinds than the waste lands of Lancashire, or the more distant solitudes of central Scotland." Much has been written on the Irish deer, descriptive justice has been done to the English and Scotch deer, but, as we read, "Curiously enough, no one except the writer himself has attempted the life of the stag upon the face of the mist-wrapped hills of the English Lake district. In the forest of Martindale, situated in the very midst of this Lake-land, the deer "which once roamed from the shores of the North Sea to the red sandstone cliffs that break the swell of the Irish Channel, have for many years past found their only northern sanctuary," and as existing in this haven Mr. Macpherson tells the tale of their lives.

These Martindale deer appear to have had no change of blood until thirteen or fourteen years ago, when one stag calf and five hinds were procured "from a well-known forest on the Scottish mainland," which soon mingled freely with the English hinds. "In a forest like Martindale, where there is no other wood than stunted hazel or wind-twisted thorns and alder, the deer are forced to subsist throughout the year on an admixture of short sweet grass and strong wiry bents, besides heather where they can get it. When Martindale was cropped with extensive fields of oats, the deer used to break bounds, and often inflicted considerable injury on the ripening grain before it was carried. At the present time the stags roam in winter in search of fields of turnips, repeating their incursions night after night, in spite of careful watching." But we cannot give more extracts, and must cease our peaceful contemplation of the animal and proceed to "Deer-stalking" under the guidance of Cameron of Lochiel.

Here the scene is changed to the Highlands of Scotland, and though sport is now the main topic there is still much to interest the zoologist. We seem always born too late to have known nature at her best. The name of deer-forest is almost as misleading as that of a Boer farm. Yet at the same time the first is at least a survival, and "seems to confirm the opinion, if confirmation be necessary, that vast regions of the Highlands were in former times covered with indigenous forests of the various species of trees, whose descendants, in sadly diminished numbers, are found at the present day scattered among the valleys and on the hill-sides of most of our northern counties." The owners have altered as well as the forests. There was a time, as our author informs us, when a nobleman was not expected to so far derogate from his position as to go into the forest and shoot deer himself when a forester was kept for that purpose. Now a successful millionaire considers he puts the seal on his social position by purchasing his right to do so. We are therefore not surprised to learn that at the present day it is calculated that about 4000 stags are killed annually. But the rifle is not the only enemy of the deer. "Spring is the ticklish time of year for all animals in the Highlands. If deer are very much reduced during the winter, they are bound to suffer when the grass begins to grow. If they are in good order they proceed to lay on flesh at once, and thus gain the full advantage of the summer grazing. It is in spring that those cold east winds prevail, often accompanied by hot sun in the day time, which parch the ground and give it a white, desert-like appearance. A well-wintered stag must be better able to stand this particularly trying period of the year than one which has only just been able to pull through the cold north-westerly blasts of wind bringing sleet, snow, or rain, which may not improbably have formed with little interruption the weather of the past four months."

Stag-hunting, by the Viscount Ebrington, transports us to Devon and Somerset, where it "is the only survival in England of a sport which was followed in earlier days in most countries in Europe, and which still has many devotees on the Continent." The total head of deer in this locality is estimated by the author at about four hundred, while the average number killed for the last ten seasons is sixty. Although sport is there again the principal theme, there are scattered notes of the greatest interest to the naturalist. Thus:—"Something is to be learned also from the feeding of the deer. If the bark of a tree or the ivy growing on it is gnawed up and down, it is the work of a hind; but if the bites are across the trunk they are a stag's." Again:—"A stag crosses his legs right and left in walking, while with a hind the prints of the hind foot will be in a direct line with those of the fore foot unless she is heavy in calf; and it is curious, seeing how careful Nature is to protect animals in that condition, that they should in anything resemble the male at that period. The extra weight on the legs is no doubt the reason, and at calving time the stags are defenceless too, having shed their horns." Another query of interest is, "What becomes of the old deer? They are not all killed by the hounds; a few may meet with foul play, but some must die a natural death. Yet it is hardly ever that their bodies are found."

The fourth section of the volume is devoted to "The Cookery of Venison," a subject of importance to every right-thinking naturalist and sportsman, but one outside discussion in these pages.

Oceanic Ichthyology: a Treatise on the Deep-Sea and Pelagic Fishes of the World. By George Brown Goode, Ph.D., LL.D., &c., and Tarleton H. Bean, M.D., M.S. Washington. 1895.

The publication of this great work—in which the authors, with the modesty that pertains to excellence, disavow the formation of "any conclusions which are new to science," though justly claiming that "a great number of new facts are recorded—worthily upholds the best traditions of the Smithsonian Institution. The aim of the authors is best expressed in their own words:—" Our purpose has been to present in Oceanic Ichthyology a discussion of all forms of fishes found in the seas of the world, both pelagic species and those occurring at depths greater than 500 feet, especial prominence being given to those species which are found in the Atlantic Ocean, most of which we have had an opportunity to study. All oceanic fishes are included, partly because it is not yet possible to distinguish strictly between the two classes, and partly because the pelagic forms have, in part at least, been mentioned in the discussions by all previous writers on deep-sea fishes." The publication will therefore find a place with, and also supplement, Prof. Collett's descriptions of the Fishes of the Norwegian North Sea Expedition, Dr. Günther's 'Deep-Sea Fishes of the Challenger Expedition,' Dr. Vaillant's Report on the Deep-Sea Fishes of the Travailleur and Talisman Expedition, and Alex. Agassiz's 'Contributions to American Thalassography.'

There is a great charm in learning the forms of life that inhabit the gloomy oceanic depths. And we still know little, for, though we are told some 600 different kinds of fishes have been obtained from the depth of 1000 feet and more, there can be little doubt that the tale of the sea is not yet told. "It seems probable that there are many inhabitants of the depths which are too swift, too wary and cunning, or too large to be taken. It cannot be doubted, for example, that somewhere in the sea, at an unknown distance below the surface, there are living certain fish-like animals, unknown to science and of great size, which come occasionally to the surface and give a foundation to such stories as those of the sea serpent." Here therefore exist the potentialities of zoological discovery of the most absorbing interest, liable almost to provoke romantic speculation. As the once discredited Herodotus has now been rehabilitated by recent African discovery, so some of the wild traditions of ocean life may come to have an explanation; myths to have some kind of realities, and fables prove to have been at least based on facts. We have, however, some negative data to qualify supposition. "The recent investigations of Mr. Agassiz in the Pacific, with the Tanner net, seem to show pretty conclusively that there are but few living forms below a depth of 1800 or 2000 feet." On those found still deeper the abyssal environment has produced much modification. Thus of *Lionurus filicauda*, Günther, reported as from great depth, its describer refers to the small eye, the soft bones, the lack of firmness in the scales, and the filamentous tail as indicating its abyssal abode.

As one turns over these more than 500 quarto pages devoted to generic and specific descriptions, with the careful details of local habitats, and when the reader may have done something of this monographic and faunistic work himself, he cannot help feeling that apart from all else, the patient labour of zoologists is an established fact. Such authors have few readers, appeal alone to their peers, and did they accept the axiom of Goethe, that he "who does not expect a million of readers should not write a line," works like those under notice would never be produced.

The accompanying Atlas contains 417 figures.

Coloured Figures of the Eggs of British Birds, with Descriptive Notices. By HENRY SEEBOHM. Edited by Dr. R. BOWDLER SHARPE. Sheffield: Pawson & Brailsford. 1896.

THIS beautiful publication may be taken as the last contribution of the late Henry Seebohm to British Ornithology. Other material may yet be printed, but it will not probably wholly pertain to "our rough island story." It is a fitting sequel to the same author's 'History of British Birds,' and though Seebohm did not live to see it published, there can be no doubt that his wish would have been gratified in having it edited by his friend Bowdler Sharpe. The system of classification is as proposed by the author, and with this we have nothing to do, for we are here concerned with eggs and not systems; in fact, criticism should be a matter between oologists and the work of the lithographers. Whether this is much required seems almost answered in the negative by an examination of the plates, which, belonging to an English work, we rejoice to see were done in England.

The descriptive notes are full and to the point. The geographical area over which the bird is at various times to be found, the place and time of nidification, the structure of the nest, and the shape, size, and colour of the eggs, are alike—where possible—given. A full enumeration of species is contributed, including the Great Auk (*Alca impennis*), two particular eggs of which belonging to the Museum of the Royal College of Surgeons, are now figured for the first time. To conclude a necessarily brief notice, we may surely say that we now possess *the* book on British Birds' Eggs.

The many surviving friends of Henry Seebohm will appreciate the striking portrait given as frontispiece, while in writing the personal memoir Dr. Sharpe has escaped both the Charybdis of panegyric and the Scylla of criticism.

By the Deep Sea: a Popular Introduction to the Wild Life of the British Shores. By Edward Step, F.L.S. Jarrold & Sons. 1896.

In perusing this book we are reminded of a long ago, when Wood's 'Common Objects of the Seashore' was a well-thumbed companion of our early days, replaced subsequently by Gosse's 'Naturalist's Rambles on the Devonshire Coast.' It sometimes seems that this branch of Zoology is not so popular as it was once; we more seldom see the private marine aquarium, less often meet with the shore collector. We are all aware of the great advance in scientific Zoology made by competent observers at Marine Stations, and may at once cite Plymouth; but our remarks are only intended to apply to the readers for whom the book is written. "In the present volume it is the author's desire to act as a friendly go-between, introducing the unscientific seaside visitor to a large number of the wonderful and interesting creatures of the rocks, the sands, and the shingle beach." As such it might be difficult to place a better book in the hands of a young enquiring sea-side naturalist. The illustrations are numerous and helpful.

The Collector's Manual of British Land and Freshwater Shells. By Lionel Ernest Adams, B.A. Second edition. Taylor Bros., Leeds. 1896.

A second edition of this well-known Manual will be undoubtedly welcomed by those to whom it is addressed. "The object of this little Manual is to enable the novice to collect, identify, and arrange systematically the various shells—both land and freshwater—which abound in almost every part of these islands."

Apart from this modest programme there are some features of general interest to the biologist. Thus Dr. Scharff, in his 'Slugs of Ireland,' is inclined to the opinion that the colours of slugs in that island are at all ages, as a rule, protective. Mr. Adams, however, considers that "the results of his own collecting tend to show that climate may be a factor in the matter." Dealing with inland localities, he finds that he has "taken more brilliant forms, and those more abundantly, in the South of England (*where the climate is warmer*) than in the north." His experience has been the same with coast localities. "All along the south coasts of England and Wales, Cardigan Bay, and the west coast of the Isle of Man and north coast of Ireland (*all of which are noted for a mild climate*), I have taken coloured forms abundantly; while on the coasts of Lancashire and North Wales and the east coast of England from the Thames to the Tees (*where the climate is more bracing*), I have no personal records for anything but the type."

This little book is not only calculated to increase the ardour of the young collector, but, what is more, make him a student of Conchology. Such primers did not exist when we were young, and it would seem—as we hope is the fact—that a taste for Natural History is increasing with the reading public. The lines of the youthful zoologist of to-day are indeed made pleasant.

EDITORIAL GLEANINGS.

Mr. L. C. Ditmars has contributed to the 'Proceedings of the Linnæan Society of New York' a descriptive list of "The Snakes found within fifty miles of New York City." These number fifteen species, belonging to thirteen genera. Only two of them, the Copperhead Snake (*Agkistrodon contortrix*) and the Banded Rattlesnake (*Crotalus horridus*), are venomous, and fortunately the first is reported as of not common occurrence near the city, and the second as becoming very rare within fifty miles of the same.

A second species of *Natrix*, *N. leberis*, has been recorded by Holbrook ('North American Herpetology') as being also found in the State, and thus included by Baird in his list of *Ophidia;* but Mr. Ditmars has found no authentic information of its being taken in the area he has defined, and so excludes it from his list.

In connection with the recent earthquake shocks in this country, attention has once more been called to the premonitory warnings given by Pheasants in Japan. Lieut. C. W. Baillie, of the Meteorological Office, made some corroborative remarks to a representative of the 'Westminster Gazette' on this subject. He is reported as saying: "Japan is—or was a few years ago—very plentifully provided with Pheasants. And I have heard them many a time in a wood close by my house making a noise that always warned us of the approach of the earthquake; and the warning was was always justified within a few minutes."

Readers of this Magazine may remember that in the volume for 1896, p. 78, attention was recalled to the fact that the Pheasant in this country was incited to crow at the sound of thunder or the firing of cannon.

In the Zoological Series of the publications of the Field Columbian Museum, Chicago, and in a paper written by Mr. D. G. Elliot on "Sundry Collections of Mammals," are some interesting observations made by Prof. J. B. Steere while collecting in the Philippine Islands. We extract the following:—

"The Fruit Bats of the Philippines prefer small islands for their roosts, but will take up with other isolated localities. I found one roost on Negros occupying one immense hard-wood tree standing by itself far from the forest on the plains of the western side of the island. Where they are not hunted for food by the natives they sometimes roost near the native houses or villages for protection. Their roosts seem to be permanently occupied. We found the specimens we procured had been feeding upon the palm-juice which the natives were collecting for *saquir* (toddy). The bats visit the trees at night and drink the juice from the cups hung on the trees."

Two new species, *Pteropus auri-nuchalis* and *P. lucifer*, are described by Mr. Elliot.

THE rinderpest, which is devastating South Africa, and has been calculated as liable to destroy ninety-nine per cent. of the domesticated oxen, has prompted the suggestion of more than one remedy. Dr. Stroud, of Pretoria, has now advocated a process of inoculation. He argues that prevention can never be brought about by a system of medication, but, in a specific disease of this terrible nature, can only be effected, either by the wholesale slaughter of the healthy along with the smitten, and so getting rid of all possible contingencies by one radical sweep; or else, by increasing in the sound animal its power of resistance to the invasion of the disease. As the rinderpest is reported to have attacked some of the wild fauna, the difficulties of the course proposed are doubtless increased.

What devastation the rinderpest has created in the Transvaal alone is shown by an extract from the Pretoria 'Press,' November, 1896:—"To quote a single instance, it may be stated that in the ward Boschveld, in the Marico district, there were, before the outbreak, some 30,798 head of oxen. Up to date 4,027 of these have been slaughtered, and 16,808 have died, representing a loss of 20,835 animals; 6,766 are still healthy, 610 are sick; 958 have been salted; 2,229 have been treated by the 'zucht' method; there being thus 9,953 head alive, for those at present sick can hardly be counted."

LOCUSTS are still ravaging South Africa. We learn from Durban, under date of last November, that on one morning during that month immense swarms stretched without intermission from Bellair to the Congella Valley, and young mealie fields and vegetable patches in many places were utterly spoiled. Part of a swarm passed over, but did not settle. Swarms were seen on the back beach, and although they were keeping pretty close to the ground, a westerly breeze which prevailed was driving them to the sea rapidly. Numbers of dead locusts, which had been washed up by the waves, were piled up in a line along the beach, and as the breeze freshened during the day the work of destruction increased.

AT a December meeting of the Croydon Microscopical and Natural History Society, the President, Mr. W. M. Holmes, stated that he had seen flocks of Wood Pigeons, numbering many hundreds, in Croham Hurst and the surrounding woods. They are much more numerous this year than usual, and they have evidently been attracted by the abundance of acorns. He was told by a keeper that he had never seen Wood Pigeons in such enormous numbers. They do not appear to do any damage to the crops. In all probability many have come over from the Continent.

A FEW days ago the father of the late Richard Jefferies passed away at Bath, where he had lived in retirement for some years. To his father the author of 'The Gamekeeper at Home' owed much of his early intimacy with Nature in all her various moods. Mr. Jefferies belonged to the sturdy yeoman class, and formerly farmed Coate Farm, in Swindon, where Richard was born and brought up. Adjoining the farm were the estates of the Dean and Chapter of Westminster, which were full of ground game, and over which the family roamed at pleasure. Stretching a few miles distant stood the Downs, whose outlines and features became so familiar to the author of 'Wild Life in a Southern County'; while in another direction a ten-mile walk brought one to Savernake. Amidst these natural surroundings the father trained his boys' observant faculties in every possible way.

WE have just heard from our friend and indefatigable collector, Dr. Percy Rendall, whose African collections, made west, south, and east of the Continent, have already borne good fruit, and are expected to produce much more when his material is thoroughly worked out. His last letter was from St. Helena, and he proposes visiting Trinidad, and perhaps St. Lucia and St. Vincent, on his way home. Probably the Tring Museum will be enriched thereby.

How "legends" in British Zoology are reported abroad may be seen from the following extract from 'The Two Republics,' published in the city of Mexico. As may be noticed, it is again copied from one of the United States journals:—

"A queer story is told of an English naturalist, who died in 1860, and was buried at Blankney, in Lincolnshire. Among his pets was a large grey Bat. This Bat was permitted to enter the tomb, and was sealed up alive along with the corpse of his dead master. In 1866 the vault was opened, and to the surprise of all the Bat was alive and fat. On four different occasions since, the relatives of the dead man have looked after the welfare of his pet, and each time it has been reported that the Bat was still in the land of the living, although occupying quarters with the dead. It was last seen in 1892."—('Cincinnati Enquirer.')

We have previously remarked on the value of private collections, especially when estimated by their ultimate reception in some public institution. We are glad to see there are collectors in Australia. From the last number of 'The Wombat,' published at Geelong, and just received, we read: "We have much pleasure in offering our congratulations to Mr. A. J. Campbell on the occasion of his collection having entered upon its sixth hundred species of Australian eggs, and upon the success of the entertainment which he gave to brother collectors in celebration of that event."

In the 'Naturalist' for January, 1897, our old contributor, Mr. John Cordeaux, in his "Bird-Notes from the Humber District: Autumn of 1896," writing on the third recorded appearance, for the British Islands, of the Indian Houbara Bustard (*Otis macqueeni*), remarks:—"Much nonsense was written at the time, in both the London and local press, on the enormity of shooting this Bustard—ignorantly called by the writers the Great Bustard—a former inhabitant of the wolds of Yorkshire. The Indian Houbara Bustard comes from Central Asia, where it is abundant, and there was not the slightest chance of this far wanderer ever finding its way back, or becoming naturalised in this country. No doubt its fate would have been decided by the first prowling Fox that came that way, or by Stoat or Weasel." We are no advocate for the extermination of birds, even for museum purposes; but there can be little doubt that Mr. Cordeaux makes out his case in this instance.

In the 'Field' for January 9th, 1897, Mr. George Hewlett, Surgeon, H.M.S. 'Barracouta,' gives the following account of an enormous stranding of Whales at Teal Inlet, East Falkland Island:—

"In the end of September, 1896, an enormous school of a species of Whale, called the Caaing Whale, ran ashore in Teal Inlet. Teal Inlet is a small creek, one and a half miles long, opening into Port Salvador, which in turn opens into the South Atlantic by a very narrow opening.

"One morning a whirlwind appeared to be approaching over the water in the bay of San Salvador, and soon this was made out to be an enormous school of Whales, so thick that they seemed to be jostling each other, nothing but fins and tails, and the water in foam all round; this was on a flowing tide, and they came on into the inlet itself, describing a sort of cycloidal curves, until the inshore part of the squadron took on a kelp reef, and then a sudden panic seemed to seize them all, and the unfortunate animals came up the inlet full speed ahead, with the sea boiling in front of them and a great wave coming after them, and they piled up in hundreds on the beach. Then, as there was a rising tide, they got off again, but only to charge the opposite beach, and so on till the falling tide and loss of strength left them high and dry all round the dreary bay; then could be heard the sort of long-drawn sighs which these mighty beasts made in breathing, and the young ones were said to have been heard to cry with a mewing sound. Some of the cows gave birth in their death agony to poor little calves, and very few, old or young, lived more than a quarter of an hour after their final stranding. Some died quietly, others beat the sand and water with their tails, dyeing the water with blood; the children, not realizing the calamity of the poor monsters, were observed to be putting stones on the blow-holes of such as they could reach, delighted to see the stones blown high into the air at each expiration. The men of the settlement were engaged with ropes in trying to save the boat-pier from destruction by the furious strokes of the tails of a couple of Whales who had got alongside it to die.

"By the evening, after that tide had ebbed, there were five Whales afloat only, out of more than 500 that had been afloat that morning, and by next morning only three were to be seen, and they swam round and round for a while, and then, as is if disdaining to live when all their companions were dead, in company they made straight for the beach, and in a few moments they also had passed for ever out of the scheme of existence. Unfortunately for the world at large, all this loss of life benefited nothing but the sea-birds and the pigs of the settlement. Circumstances made it impossible to use the blubber. Some of the bodies have been burnt; they burn like a great oil-shed. The spring tides fortunately floated others up and down and dispersed them, otherwise the stench would have been unbearable.

"As for the cause of this catastrophe among the Whales, my friend Mr. Felton, who manages the estate, thinks that the school got into the bay of San Salvador and lost their way in its ramifications, and could not get suitable food, and became delirious from starvation, thus committing suicide. He dissected some of them, and found both stomach and intestines empty; but, against this theory, they all had about two inches of blubber all over them, and therefore had not wasted very much.

"These Whales were from thirty feet to four feet long. The four-feet ones were just born. They were of all ages and sexes. They had small, sharp-cutting teeth in each jaw, and a very large tongue; the head was not very large, certainly not more than a seventh of the body length."

As we go to press news has been received of the burning of the residence of Mr. John Harvie Brown, and the total destruction of his valuable Natural History collection. We desired to record "Museum Notes," but deeply regret that this should prove to be the first contribution. We not only express our sympathy with Mr. Harvie Brown, on such a more than personal loss, but feel that British zoologists will universally deplore the catastrophe.

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